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Case Report

Revision of dysfunctional filtering bleb by conjunctival advancement with bleb preservation A simple choice for massive choroidals with hypotony following trabeculectomy

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Abstract

A 65-year-old diabetic and hypertensive male presented with a sudden diminution of vision after sustaining a trivial fingernail injury to his only good-seeing (right) eye. The patient underwent phacotrabeculectomy with posterior chamber intraocular lens (PCIOL) implantation 22 years previously. In his right eye visual acuity at presentation was counting fingers at 1.5 m with an accurate projection of light. Intraocular pressure (IOP) was 4 mmHg. The anterior chamber was uniformly shallow with a peripheral iridocorneal touch. Angle details could not be visualized. The bleb was avascular, thin and cystic with a positive forced Seidel test. Fundus examination showed 360° choroidal detachments. B-scan ultrasound revealed massive choroidals. Revision of dysfunctional filtering bleb by conjunctival advancement with bleb preservation and anterior chamber reformation with healon was performed. Postoperatively, the first day visual acuity improved to 6/36, the anterior chamber was deep, bleb was well covered with conjunctiva, the IOP was 10 mmHg and fundus examination revealed resolving choroidals. At the final follow up at 4 months, the patient did not require medication and visual acuity was 6/12, the bleb was functioning well with an IOP of 14 mmHg. Examination of the fundus revealed a cup-to-disc ratio of 0.5 with moderate non-proliferative diabetic retinopathy changes. The patient has been advised to maintain a strict glycemic control and return for routine follow up after 3 months.

Keywords: Choroidal effusion, Conjunctival advancement, Bleb preservation

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Introduction

Choroidal detachment with associated hypotony is one of the complications encountered after filtering surgery. A choroidal detachment occurs when the transudate fluid crosses the capillary walls of the choroid and collects in the potential space between the uvea and sclera.[1] The associated hypotony due to aqueous hyposecretion may result from concurrent iridocyclitis and from ciliary body detachment.[2] Choroidal detachment may occur several days postoperatively or it may occur in the late postoperative period due to a variety of causes including hypotony, ocular inflammation and trauma. When effusions develop, most are localized and non-appositional and have no effect on visual acuity. In such cases, the effusions may resolve with either observation or treatment with topical cycloplegic agents and corticosteroids. In more severe cases, choroidal effusions are associated with a reduction in visual acuity and can produce central apposition of retinal tissue or flattening of the anterior chamber. In these eyes, surgical drainage of the choroidal

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effusions should be considered. In a majority of cases, surgical drainage achieves anatomic resolution of the effusion and may improve vision and resolve hypotony.[3] However, it may be difficult to determine when to intervene surgically and the likelihood of success after drainage.

The authors report a case of a monocular patient who developed 360° choroidal detachment with hypotony following trabeculectomy in his seeing eye and was successfully managed with conjunctival advancement and anterior chamber reformation with healon with impressive results providing the patient with good vision and an improved quality of life.

Case report

A 65-year-old male diabetic and hypertensive presented with a sudden diminution of vision after sustaining trivial finger nail injury to his only good-seeing right eye. Twelve years previously he had undergone phacotrabeculectomy with posterior chamber intraocular lens (PCIOL) implantation in the right eye. In the right eye visual acuity at presentation was counting fingers at 1.5 m with accurate projection of rays. Intraocular pressure (IOP) was 4 mmHg. The anterior chamber was uniformly shallow with iridocorneal touch peripherally. Angle details could not be visualized. The bleb was avascular, thin and cystic (Fig. 1a) with a positive forced Seidel test. Fundus examination showed 360° choroidal detachment. B-scan ultrasonography revealed massive choroidals (Fig. 1b). The initial treatment with topical steroids, pressure patch and atropine was started and the patient was scheduled for bleb revision and anterior chamber reformation with healon after stabilization of his systemic condition. Revision of the dysfunctional avascular cystic filtering bleb was performed by conjunctival advancement thereby preserving

Figure 1a. Avascular and thin cystic bleb.

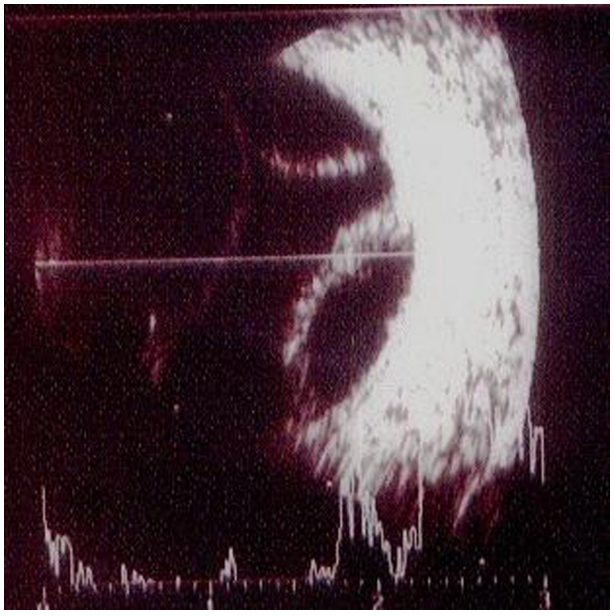

Figure 1b. B-scan ultrasound showing serous choroidal detachment.

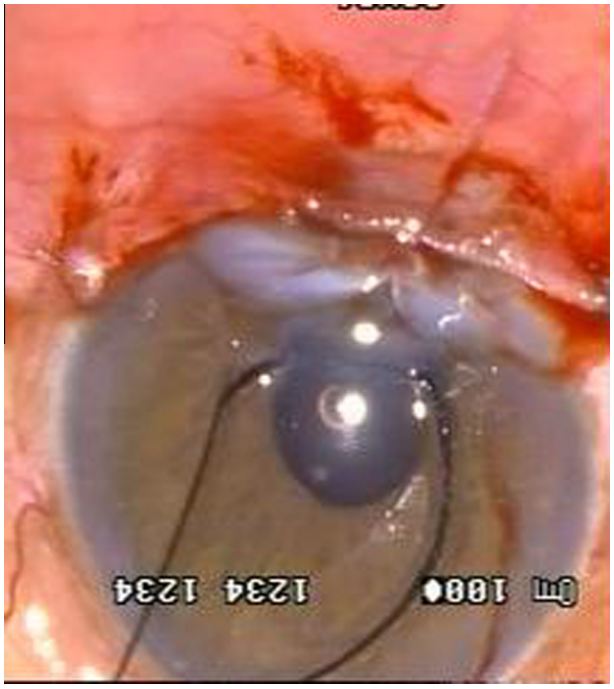

Figure 2. Conjunctival advancement over the preexisting bleb.

the bleb and the anterior chamber was reformed using healon to address hypotony (Fig. 2).

On the first postoperative day, visual acuity improved to 6/36, the anterior chamber was deep, the bleb was well covered with conjunctiva, the IOP was 10 mmHg and funduscopy showed resolving choroidals. One week postoperatively, the visual acuity improved to 6/18, IOP increased to 14 mmHg, the anterior chamber was well formed and the choroidals resolved completely (Fig. 3a) and moderate diabetic retinopathy was visible. However a thinning of the functional bleb was seen temporally (Fig. 3b). Considering the poor ocular

Figure 3a. Fundus showing no choroidals.

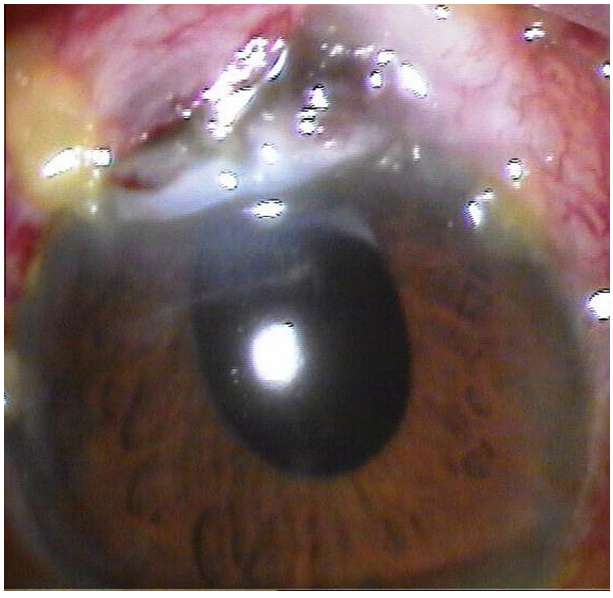

Figure 3b. Thinning of the bleb seen temporally.

Figure 4a. Vascularisation of bleb started.

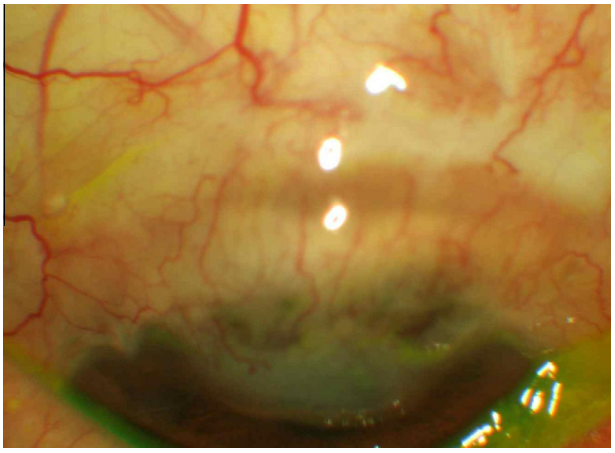

Figure 4b. Diffuse and functional bleb at final follow up.

surface as an inciting cause, the patient was prescribed oral doxycycline bd, topical steroids on a tapering schedule and aggressive lubrication.[4]

After 2 weeks the vascularization of the bleb was occuring and areas of thinning were reduced (Fig. 4a). At the final follow up of 4 months, the patient did not require medication, the vision stabilized at 6/12, the bleb is functioning well with an IOP of 14 mmHg (Fig. 4b). An examination of the fundus revealed a cup-disc ratio of 0.5 with moderate non-proliferative diabetic retinopathy (NPDR) changes. Patient was advised to maintain strict glycemic control and return for routine follow up at 3 months.

Discussion

Ocular hypotony is defined by the presence IOP below 6 mmHg or by the existence of an IOP below the level which entails functional and structural changes preventing the normal eye function.[5] Post-filtration hypotony may be due to overfiltering blebs, bleb leakage, inflammation or ciliochoroidal detachment. The frequency of the late bleb leaks ranges from 1.8–10%.[6] They are usually due to the thin-walled blebs that are common with antimetabolite-supplemented trabeculectomies. In the current case, trivial trauma could have created a small hole in the thin-walled avascular cystic bleb causing leakage and inflammation. Hypotony was prolonged past the leakage period, probably by ciliary body detachment. Choroidal detachments due to serous effusions in the suprachoroidal space are a frequent occurrence after glaucoma filtering or tube shunt surgery, especially in association with hypotony. When severe, the choroidal detachments can cause the anterior chamber to shallow, obstruct vision, and decrease aqueous fluid formation. In most instances, the choroidal detachment is treated medically with mydriatics/cycloplegics and steroids and resolves spontaneously as the IOP increases.[7] However, with the use of adjunctive antimetabolites during trabeculectomy, prolonged hypotony may lead to prolonged or persistent choroidal detachments.[8] Surgical drainage of persistent choroidal effusions may be required in these cases to restore the normal anatomy and visual function. Though associated with successful outcomes, the procedure can have devastating complications such as phthisis bulbi, persistence of choroidals requiring repeat drainage, retinal detachments and progression of cataracts.[3] In this

case the patient was monocular, the risk level (and apprehension) was high for a surgical drainage of the choroidals as we were unsure of the outcomes of this procedure. Since it was mandatory to break the vicious cycle of hypotony and choroidal detachment, we thought of this simple procedure to cover the avascular and thin dysfunctional bleb by conjunctival advancement along with reformation of the anterior chamber with healon to build up the IOP thereby helping in early resolution of the choroidals.

Conclusion

Simple intervention can help restoration of sight in a dysfunctional bleb. Clinical diagnosis and timely intervention is the key to success.

Conflict of interest

The authors declared that there is no conflict of interest.

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